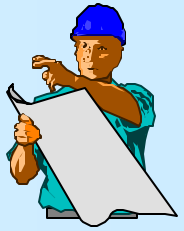
US Army Corps of Engineers®



Applying Sustainability Concepts to Master Planning

Army Worldwide Environment and Energy Conference

Fredrik (Rik) Wiant
HQ USACE

The Problem

Even if we use SPRT for all new construction, we won't get to sustainable installations!

- MILCON is limited -- at least 150 years to rebuild
- Often -- No context for sustainable siting
- Buildings are the major, but not sole significant energy users -- and not the major polluters

We can't get to sustainability without dealing with cars and sprawl!

How we got there

World War II (1940-??)

- Walking (marching) primary cantonment transportation
- Few POVs
- Troop MWR facilities close to troops
  - Chapel
  - PX
  - Theater
  - Gym
- BOQs near unit

Post-War Peacetime Post

- Auto is primary transportation
- POVs for permanent party
- Reduced facilities
  - Chapel specialization
  - Main PX Complex
  - 1-2 Theaters
- Family housing
  - segregated from units
  - Models 50's suburbia

What needs to happen

- Reduced use of fossil fuel
- Reduced air emissions (“green house gas, etc.)
- Reduced impervious surface (roads, parking)
  - Storm water run off
  - Heat reflection/retention
- Less lawn, More trees

How to get there--
Concepts from Sustainable Planning

- Rely more on muscle-powered transportation
  - bikes, walking, running
- Densities that support mass transportation
- In-fill development
- Return reclaimed cantonment to natural environment
  - Close in training
  - Habitat

Realities

- Low priority for Sustainability
  - **No mandate for massive change - Yet!**
- The car is king!
- Suburbia is still the QOL paradigm
- Army Transformation
- Army focus on individual facility
- Force protection mandates
- Facility and environmental planning disconnect
- No increase in funding levels!

Example 25-year goals

- 90% reduction in aquifer use
- 75% reduction in air emissions
- Buildings rated at LEED platinum level (“green

- 100% procurement/lease of recyclable materials
- 80% reduction in energy costs
- Restore 25% of land and aquatic ecosystems

Some Conclusions

- Incremental progress -- over a long (20+ year) period
- Can be done within our existing planning process
- Good base level master plans
  - Identify opportunities
  - Focus development towards goals
- Metrics needed
  - Establish goals
  - Measure progress

A Roadmap to the Plan

- Establish metrics
  - External
  - Internal
- Use visioning to establish achievable goals
- Evaluate options and opportunities
- Build into the Master Plan

Build into the Master Plan

- Future Development Plan(LRC)
- Transportation Plan (LRC)
  - Public
  - Muscle powered (pedestrian/bike/running)
  - Supporting policies
- Installation Design Guide (LRC)
- Capital Investment Plan
  - Rehabilitation (reuse)
  - New construction

Summary

- Sustainability requires goals and metrics
- The master plan must be tied to goals
- The master plan must be kept comprehensive and relevant
- The master plan is an essential element in attaining “Sustainable Installations”